

ABSTRACT OF THE DISCLOSURE

The invention is directed toward methods for operating a series hybrid vehicle in a manner that responds to the operator's demand for power output, while maximizing engine efficiency and minimizing disruptions in vehicle drivability. According to principles of the present invention, when the driver of a series hybrid vehicle makes a demand for power output, whether the secondary power source(s) is supplied with secondary energy stored in an energy storage device(s), direct input energy generated by an engine(s), or both, depends on the amount of available secondary energy stored in the vehicle's secondary storage device(s) alone, and in combination with vehicle speed. During the time that the engine is used to generate secondary energy, the power efficiency level at which the engine is operated also depends on the vehicle speed and the amount of available secondary energy stored in the vehicle's secondary storage device alone, and in combination with vehicle speed. Further, in some embodiments, when the engine is not generating secondary energy, the engine is selectively turned off or idled in response to various operating conditions.

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